

does not agree with the description. The curious proboscis monkey, *Semnopithecus (Nasalis) larvatus*, the Bornean gibbon, and several Indian and Ceylonese monkeys also furnish occasion for interesting notes, some of which are novel.

The greater part of the work is however devoted to descriptions of shooting wild animals, such as may be found in dozens of sporting books, or to accounts of the ordinary incidents of travel, and the book is prolonged by dissertations on the habits of animals, and on specific characters. Here the author is fairly beyond his depth. Chapter XX., for instance, is occupied with an account of the habits of the Indian elephant. Nearly the whole is compiled from Sanderson and other writers, and some of the statements thus copied are of very doubtful accuracy. Thus Schlegel's view that the Ceylon elephant is the same as the Sumatran, and distinguished from that of India by the number of ribs and dorsal vertebrae—a view long since shown by Falconer to be untenable—is stated as if it were an undoubted fact. Before, however, one has read much of Mr. Hornaday's work, it is manifest that the author's zoological knowledge is superficial and imperfect. At p. 14 the limestone of which the pyramids are built is said to be "full of nummulites, little flat echinoderms;" and at p. 72 we read, "unlike all other antelopes, the female gazelle possesses horns." Of course the author meant to write, unlike all other *female* antelopes, but this does not prevent the statement being a gross error; it might have been expected that any one writing on mammalia would be acquainted with such conspicuous instances of horned female antelopes as are offered by the eland and oryx.

It may naturally be inferred that the scientific names applied to animals by Mr. Hornaday are not always correct. For instance, at p. 107 he records the shooting in the Wynaad forest, Southern India, of a specimen of *Semnopithecus leucoprymnus*, a kind of monkey peculiar to Ceylon. The animal shot was probably *S. priamus*, of which there is a fine South Indian specimen in the Agassiz Museum, Cambridge, Mass., very possibly derived from Mr. Hornaday's collection, but wrongly labelled *S. entellus*. The circumstance that the Wynaad *Semnopithecus* is wrongly identified makes it probable that the Ceylon monkeys called *S. leucoprymnus* (pp. 268 and 277) were also *S. priamus*.

One point in Mr. Hornaday's favour it is only just to notice. His account, so far as it is possible to judge, is truthful. He may err in citing authorities who are incorrect, but his own observations appear trustworthy, and he records his failures with as much spirit as his successes. The illustrations are numerous and as a rule fairly good, if not always very artistic, but some of the views, and especially that of Ootacamund, opposite p. 96, give a poor, and not a very correct idea of the scenery.

W. T. B.

OUR BOOK SHELF

Traité de Zoologie Médicale. Par Prof. R. Blanchard. Part I. (Paris: J. R. Baillière et fils, 1886.)

It is difficult to comprehend what is meant by medical zoology, but it is easy to take in the object and design of this manual. These are to give a general sketch of the structure and classification of the various forms of animal

life, and to call the attention in some detail of medical men or students to those species, which are either useful or injurious to man. It would thus aim at combining an introduction to zoology with a short treatise on animal parasites and some notes on economic zoology. We doubt if in the pages of a small volume such a treatment of this vast subject could be satisfactorily carried out, and it speaks a great deal for the knowledge and tact of Prof. R. Blanchard, that he has, so far as we can judge from this first part of his manual, succeeded in producing a most readable work, which cannot fail of being attractive to the class for whom it has been written, and the knowledge conveyed in which is fairly up to a modern point of view. The manual is destined to form a volume of about 800 pages, illustrated by some 400 figures, which, for the most part drawn from original sources, are fairly reproduced. We note that at least in one case this reference to original figures has not been without its advantages, for the figures given by Saville Kent, in his manual of the Infusoria, of *Asthmatos ciliaris*, Salisbury, not being exact, have been misleading to others who have again reproduced them, and there can be no doubt that this so-called parasite, thought to be the cause of hay catarrh, is nothing but an isolated epithelial cell of the naso-pharyngeal passages. The references to authorities seem very complete, and the second part is promised immediately with a title-page and "les tables." May we hope that these latter will include an index of the species referred to, or at least of those the life-histories of which are given in detail. This would immensely increase the usefulness of the volume.

Microscopische Reactionen. By Dr. Haushofer, Professor am Technischen Hochschule, Munchen. (Braunsweig: Vieweg und Sohn, 1885.)

THIS book will be hailed both by the ordinary chemist, and also by the geologist, and also by the pharmacist, as a most valuable addition to our already very numerous books on chemical reactions or analysis. The object of the author has been to arrange in such a form as can be used in the laboratory, tests and reactions of a great number of substances which may be performed on very minute quantities, and the resulting bodies recognised by their characteristic forms under the microscope. As the author says, some substances are so easily recognised in minute quantities even in the ordinary way, like iron, iodine, or by spectroscopic means, as thallium or lithium, that recourse to the microscope is seldom necessary. But in the majority of cases, where small quantities have to be looked for, the style and general habitus of crystal produced either in precipitates or by evaporation from solutions, and especially their behaviour towards polarised light, gives most valuable indications of the presence of any metal, and where, as in most cases can easily be done, several salts are in this way compared, the results are quite as conclusive as with large quantities. The substances treated of are metals, non-metals, and acids, which are arranged for greater convenience of reference in working, in alphabetical order. The principal and most general forms of crystals are illustrated by 137 well-executed woodcuts.

A Bibliography of Protozoa, Sponges, Coelenterata, and Worms; including also the Polyzoa, Brachiopoda, and Tunicata, for the Years 1861-83. By D'Arcy W. Thompson, B.A., Professor of Biology, University College, Dundee. (Cambridge: The University Press, 1885.)

THE importance of the well-known "Bibliotheca Zoologica" of Engelmann, with its immense and accurately-compiled supplement by Victor Carus, to the biological student need not be insisted on, and in the present work we have this record carried out to 1883 for the large groups of the Protozoa, Sponges, Coelenterata, and Worms, including also the Polyzoa, Brachiopoda, and Tunicata. This

volume of nearly 500 pages has been beautifully printed at the Cambridge University Press, and is one that will be a most handy work of reference to all students. In a short preface the author apologises in advance for possible deficiencies. It would be impossible to have a work of this sort free from omissions; but we have gone over very carefully the portion of the bibliography with which we were most familiar, and have been very much struck with its extreme accuracy. It is proposed to publish in the course of 1886 a supplement, to contain all detected omissions, and the author will gratefully receive any additional titles that may be sent to him. We would suggest that it might not add too much to the labour of preparing this, and that it would certainly add to the value of the supplement if omissions in Carus's volumes were also taken notice of, so that the bibliography of the groups now catalogued by Mr. D'Arcy Thompson should be fairly complete. This has been, we notice, already done in some instances in the volume before us. An index of authors' names would also be of use.

On the Ethics of Naturalism. (Shaw Fellowship Lectures, 1884). By W. R. Sorley, M.A. (W. Blackwood and Sons, 1885.)

THE theory of evolution has established its claim to having given the most satisfactory account of all forms of natural life, and Mr. Sorley endeavours here to show how it yields, by advancing it a step further, a complete explanation of human nature, mental as well as physical.

Whence, then, do human rules of action and aspirations for future right conduct come, and what sustains them? Mr. Sorley points out that happiness cannot explain the definite end of human action; it is only another name for it. Education and legislation combine to make the greatest happiness of the greatest number the desirable thing for each man's actions to tend towards, but there is little difficulty in pointing out the weakness of the theories of earlier writers who have tried, without the help of Darwin, Spencer, Galton, and others, to explain the feeling of duty; the feeling that we *ought* to do one thing rather than another when the former does not at the time seem so agreeable. We may quote Hobbes, for instance, who is unable to explain why any man feels any *duty* to his neighbour, and invents the fiction of the "social contract"; and Prof. Bain, who has to account, by the associations of a few years, for the harmony of feeling between the individual and the whole. Evolution, of course, explains that although in the earlier days of the human race, each beneficial action sprang from egoistic motives, yet that the good result to the society has led to an inherited sympathy with such actions and such actors. There is the difficulty that since present ideas, according to the doctrine of evolution, are the latest outcome of all past experience, and what we are is the last result of all past influences, we seem to arrive at the very unprogressive conclusion that whatever is is right. And if, indeed, each man found that he had arrived at perfect harmony with all his surroundings, this would be the ideal state. This, however, is the case with none of us. Few of us but find the well-known utterances of the former and the "Video meliora, proboque, deteriora sequor" of the latter the counterpart of our own experiences, and still more easy is it to see how far from the present accepted ideals are all our neighbours. But as among all the slightly differing variations of a species there is a tendency to return to one type, so among all the contending inclinations and dispositions of the members of a race there abides an inherited code of morality, now become instinctive; one, as nearly fixed in each individual as the form of any species, but, like that, varying and developing in different individuals, families, and nations, and adapting itself to changed surroundings. These surroundings have always in human history been so different that the inborn or

ideal code has not at any time become a general, still less a universal, one, and the struggles after holiness of the Hebrew, after beauty of the Greek, and after justice of the Roman, are still being continued in various proportions as modern times and conditions of existence have altered.

To some a morality never to be fixed will not appear a very steady one; a morality that is calculated to vary at different epochs and in different climates. Yet, surroundings always changing, man has to adapt himself to the change; always, therefore, will he be labouring towards a changed goal. Neither is it a cheerful prospect for the race. There will always be the "necessity for strong egoistic feelings and conduct in the struggle for existence, where the better-equipped organism asserts and maintains its supremacy only by vanquishing the organisms which are not so supplied." This struggle will continue on the highest levels of progress to which our race will reach; for "the multiplication of desires and of desiring individuals keeps so well in advance of the means of satisfying desires, that it is doubtful whether the course of evolution is fitted to bring about complete harmony between different individuals. It would almost seem that the 'moving equilibrium' in human conduct in which there is no clash of diverse interests cannot be expected to be brought about much before the time when the physical factors of the universe have reached the stage in which evolution ends."

Clark's Transit Tables for 1886. (London: E. and F. N. Spon, 1885.)

MR. LATIMER CLARK is still faithful to his self-imposed duty of enabling any one to obtain accurate time in any part of the world by means of the transit instrument, without any calculation. As in former years, Mr. Latimer Clark has now computed from the *Nautical Almanac* all the data necessary to enable this to be done for 1886. The author is doing a good work, for which every student of astronomy should thank him, for we have little doubt that most of those who procure a little transit instrument, and work it under Mr. Clark's able direction, will not end there.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

The Late Total Eclipse

ALLOW me to call the attention of such of your readers as are not already aware of the fact that the phenomena I mentioned in my notes of the late eclipse—the "pulsation" of the sun's light just before totality and the simultaneous "wave-shadows"—are recorded by Grant ("Hist. of Phys. Astronomy," p. 404) as having been witnessed in France during the total eclipse of 1842. He mentions several probable causes or contributing causes; among them the unsteadiness of the air, which certainly existed here. I have not been able to find these phenomena (or phenomenon with a double aspect) mentioned in any other work accessible to me, and should be obliged to you for a statement of the explanation now received. To an outsider the (apparent) rarity and local character of the phenomenon seem to cause this difficulty:—If it is owing to any cosmical cause, or one common to any large part of our atmosphere, it would seem that the phenomenon should be more widely seen; if, on the other hand, it is owing to the unsteadiness of the observer's atmosphere, should it not occur oftener?

Allow me to add that in suggesting in my notes that the small prominences I saw were "Baily's Beads" I was writing ignorantly, having been long under the impression that Baily's